



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,382	08/02/2006	Norimasa Miyachi	0283-0230PUS1	8437

2292 7590 12/17/2008
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

SCHIRO, RYAN RAYMOND

ART UNIT	PAPER NUMBER
----------	--------------

1792

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

12/17/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/588,382	Applicant(s) MIYACHI, NORIMASA	
	Examiner RYAN SCHIRO	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/02/2006 and 10/13/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al. (US 6777039) in view of Funakoshi et al. (US 7175892).

4. Koike teaches an inkjet recording sheet that has a color receiving layer formed by applying a first coating liquid and a second coating liquid, as required by claims 1 and 8 (abstract). One of the coating liquids includes polyvinyl alcohol and inorganic vapor-phase process silica, as required by claims 1 and 8 (abstract). The other coating liquid contains a cross-linking agent capable of cross-linking the polyvinyl alcohol, as required by claims 1 and 8. The mean particle diameter of the inorganic silica is preferably 30 nm or less, as required by claims 1 and 8 (col. 6, lines 53-54). Koike teaches boron compounds such as borax, boric acid, borates,

Art Unit: 1792

etc., are preferable among available cross-linking agents because of a swift cross-linking reaction, as required by claims 8 and 13 (col. 10, lines 43-46). Koike teaches the use of metal salts such as chrome alum, potassium alum, zirconium sulfate, chromium acetate and the like as possible cross-linking agents, as required by claims 4 and 11 (col. 11, lines 9-11). Preferable examples taught by Koike for the support paper include cast-coated paper and polyolefin coated paper, as required by claims 6, 7, 14 and 15 (col. 19, lines 8-18).

5. Koike does not teach the resin binder has a keto group, as required by claims 1, 2, 8 and 9. Also, Koike does not teach an acetoacetyl-modified or diacetoneacrylamide-modified PVA, as required by claims 3 and 10. Koike does not teach that the crosslinker is a compound having two or more hydrazide groups, as required by claims 5 and 12.

6. Funakoshi teaches a polymer emulsion used for making an ink jet recording medium (col. 1, lines 10-20). A polymer compound is included in the polymer emulsion. It is preferable to include a polyvinyl alcohol or polyvinyl alcohol derivative, wherein the polyvinyl alcohol derivative can be a polyvinyl alcohol with a keto group, as required by claims 1, 2, 8 and 9 (col. 18, lines 3-17). Funakoshi teaches that the type of monomers containing a carbonyl group is not limited and may include diacetone acrylamide, as required by claims 3 and 10 (col. 19, lines 9-12). When the polymer emulsion contains a carbonyl group, which is the same as a keto group, it is preferable to use a crosslinking agent hydrazine derivative having at least two hydrazine groups, as required by claims 5 and 12 (col. 19, lines 18-21).

7. Neither Koike nor Funakoshi teach that the coating process is performed where the crosslinking solution is coated on the support then the inorganic particle and resin solution is coated on top of the crosslinking solution, as required by claims 1 and 8.

Art Unit: 1792

8. Koike teaches that both coating liquids can be applied simultaneously, in one step (col. 17, lines 14-17). In general the transposition of process steps or the splitting of one step into two, where the processes are substantially identical or equivalent in terms of function, manner and result, was held to not patentably distinguish the process. *Ex parte Rubin*, 128 USPQ 440 (Bd. Pat. App. 1959).

9. It would have been obvious to a person ordinarily skilled in the art at the time of the invention to combine the teachings of a two part ink jet sheet coating method as taught by Koike with the specific use of a keto group polyvinyl alcohol or diacetoneacrylamide vinyl compound, as taught by Funakoshi. One would have been motivated to make this combination because Funakoshi teaches that the keto group polyvinyl alcohol, especially when coupled with a hydrazine crosslinker, is preferable because it forms a stronger and more water resistant recording medium than monomers without a carbonyl group.

Conclusion

Claims 1-15 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Schiro whose telephone number is 571-270-5345. The examiner can normally be reached on Monday-Friday from 8:30 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached at 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1792

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Michael Barr/

Supervisory Patent Examiner, Art Unit 1792